TITLE: RVfpga: Understanding Computer Architecture

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DESCRIPTION OF THE CONTENTS:

RISC-V FPGA (RVfpga) is a teaching package that provides a comprehensive, freely distributed, and complete RISC-V course that allows students to learn about the RISC-V ecosystem. The package includes two courses: RVfpga and RVfpga-SoC. The first course, RVfpga, includes comprehensive instructions, tools, and labs for targeting a RISC-V SoC to an FPGA and to a Simulator, programming in C and RISC-V assembly, using peripherals and adding new ones to the SoC, and analyzing and modifying the RISC-V core and memory system. The second course, RVfpga-SoC, shows how to build a RISC-V SoC from building blocks using Vivado Block Design and FuseSoC, run the Zephyr real-time operating system (RTOS) on the SoC, and test several programs, including a Tensorflow program. The two courses are based on the open-source SweRVolf SoC and Western Digital's RISC-V SweRV EH1 core, both which are part of the Chips Alliance ecosystem. The target audience is mainly academics, but also industry professionals, researchers, students and everyone interested in RISC-V. The materials are available through the following webpage: https://university.imgtec.com/